



Assignment Brief

Academic Year 2022-23

Module code and title:	CO664 Design Patterns	Module leader:	Nicholas Day
Assignment No. and type:	CW1 Design Patterns Logbook and Report	Assessment weighting:	100%
Submission time and date:	Thursday 2 February	Target feedback time and date:	+3 weeks

Assignment task

In your Jupyter logbooks complete the Anaconda, Jupyter and Python exercises [20 marks]

In your logbooks extend, modify, reinterpret and/or critically evaluate the Design Pattern examples presented as instructed [40 marks]

In your logbooks draw on a selection of **Two** Design Patterns, and document these using the following headings: [40 marks]

1. intent;
2. motivation;
3. structure (embed UML diagrams if applicable);
4. implementation;
5. sample code (your working example);

evaluation – raise any key points concerning programming language idioms, consequences of using the pattern, examples of appropriate uses with respect to application, architecture and implementation requirements

This assignment has been designed to provide you with an opportunity to demonstrate your achievement of the following module learning outcomes:

LO 1	Interrogate and articulate the structures and intentions of major Design Patterns
LO 2	Implement Design Patterns in one or more object-oriented language
LO 3	Evaluate, from requirements specifications/definitions, and propose Design Patterns appropriate to application architecture and implementation

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Task requirements

- Demonstrate the development of your Design Pattern code solutions during the workshop sessions
- Submit a logbook in a code notebook format
- As a guide, submissions should not normally exceed 2500 words, excluding code, tables and diagrams.

Referencing and research requirements

Please reference your work according to the APA (American Psychological Association) style as defined in *Cite Them Right Online* (<http://www.citethemrightonline.com>). This information is also available in book form: Pears, R. and Shields, G. (2019) *Cite them right: the essential reference guide*. 11th edn. Basingstoke: Palgrave Macmillan. Copies are available via the University library.

How your work will be assessed

Your work will be assessed against the assessment criteria which have been provided at the end of this brief. These criteria have been designed specifically for this assignment and are intended to measure the extent to which you have demonstrated your achievement of its associated learning outcomes (see above). They have been aligned with the institutional grade descriptor appropriate for your level.

The assessment criteria provide a basis for fair and consistent marking and indicate what is expected of you in this assignment. It is strongly recommended that you engage with them while you are working on the assignment and use them in combination with any feedback you receive once your work has been marked to help you plan for future learning and development.

Submission details

- This assignment should be submitted electronically. Please use the relevant Turnitin submission point in the Submit your work area in your Blackboard module shell.
- Please ensure that your work has been saved in an appropriate file format. Turnitin will only accept the following file types: Microsoft Word, Excel or PowerPoint, PostScript, PDF, HTML, RTF, OpenOffice (ODT), Hangul (HWP), Google Docs, or plain text. Your file must also contain at least 20 words of text, consist of fewer than 400 pages and be less than 40MB in size.
- You can submit your work as many times as you like before the submission date. If you do submit your work more than once, your earlier submission will be replaced by the most recent version.
- Once you have submitted your work, you will receive a digital receipt as proof of submission, which will be sent to your forwarded e-mail address (provided you have set this up). Please keep this receipt for future reference, along with the original electronic copy of your assignment.
- You are reminded of the University's regulations on academic integrity, which can be viewed on the University website: <https://www.bucks.ac.uk/sites/default/files/2021-07/academic-integrity-policy.pdf>. In submitting your assignment, you are acknowledging that you have read and understood these regulations
- Please also note that work that is submitted up to 10 working days beyond the submission date will be considered a late submission. Late submissions will be marked and the actual mark recorded, but will be capped at the pass mark (typically 40%), provided that the work is of a passing standard. Work submitted after this period will not be marked and will be treated as a non-submission.

Before you submit

- Please use the provided checklist below to make sure you are 'fit to submit' your work
- We recommend you use this checklist as soon as you get this assignment brief to help you plan your work

Fit to Submit: Assignment Checklist

This brief **assignment checklist** is designed to help you avoid some of the most common mistakes students make in their coursework.

Have you read the assignment brief? If not, do so now!

In it you will find details of the assessment task, word count, the assessment criteria your work is marked against, and the learning outcomes – the basis for the assessment strategy in each module.

Students often lose marks by forgetting some of the more straightforward elements of their assignments. We recommend that you "tick off" each of the points below as you prepare your work for submission. If you need any help, ask your tutor and/or visit

<https://bucks.ac.uk/students/academicadvice/assessment-and-examination>

- ☐ Have you read and understood the assessment criteria?
- ☐ Have you **met** the learning outcomes? You will lose marks and your work may even be failed if you have not.
- ☐ Have you demonstrated you can think and write *critically* in the completed work? This means you have supported your arguments/explanations appropriately e.g. using relevant academic sources and you have offered discussion points which extends your own or others' viewpoints to make reasoned conclusions/judgements.
- ☐ Have you maintained an *appropriate tone* throughout your work? Is your work formal, focused, developed and clear?
- ☐ Have you checked that the [referencing](#) in your assignment is in line with your programme requirements?
- ☐ Have you proof-read your work and used spellcheck software to check your spelling and grammar?
- ☐ Have you checked the presentation of your work is as specified by your tutor, for example, are font size, colour, style, line spacing and margins as the tutor specified?
- ☐ Have you kept to the word count (or equivalent)? If you are not sure, check with your tutor.
- ☐ Can you confirm that the work submitted is your own and maintains [academic integrity](#)?



Assessment Criteria

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	Fail 0-34 (F) – Fail	Fail 35-39 E – Marginal fail	Pass 40-49 (D)	Pass 50-59 (C)	Pass 60-69 (B)	Pass 70-79 (A)	Pass 80-100 (A+)
	Not successful	Below required standard	Satisfactory	Good	Very Good	Excellent	Outstanding
Knowledge & understanding Indicators: <ul style="list-style-type: none"> • Depth of knowledge and understanding • Engagement with subject-specific theories, paradigms, concepts, and principles • Background investigation, analysis, research, enquiry and/or study 	The work demonstrates a limited and/or substantially inaccurate or no understanding of key aspects of the subject, with few if any examples of coherent and detailed knowledge, which is unlikely to be at, or informed by, the forefront of defined aspects of the discipline e.g., recent research, latest techniques.	The work demonstrates insufficient understanding of key aspects of the subject, including some coherent and detailed knowledge, little of which is at, or informed by, the forefront of defined aspects of the discipline e.g., recent research, latest techniques.	The work demonstrates a basic yet systematic understanding of key aspects of the subject, including some coherent and detailed knowledge, at least some of which is at, or informed by, the forefront of defined aspects of the discipline e.g., recent research, latest techniques.	The work demonstrates a sound breadth and depth of systematic understanding of key aspects of the subject, including some coherent and detailed knowledge, some of which is at, or informed by, the forefront of defined aspects of the discipline e.g., recent research, latest techniques.	The work demonstrates a sophisticated and critical systematic understanding of key aspects of the subject, including coherent and detailed knowledge, much of which is at, or informed by, the forefront of defined aspects of the discipline e.g., recent research, latest techniques.	The work demonstrates a highly accomplished systematic understanding of key aspects of the subject beyond what has been taught, including coherent and detailed knowledge, most of which is at, or informed by, the forefront of defined aspects of the discipline e.g., recent research, latest techniques.	The work demonstrates an exceptional systematic understanding of key aspects of the subject, including coherent and detailed knowledge well beyond what has been taught, all of which is at, or informed by, the forefront of defined aspects of the discipline e.g., recent research, latest techniques
Application and practice Indicators: <ul style="list-style-type: none"> • Development and/or application discipline-specific specialist skills • Accuracy, coordination, and proficiency in 	Work demonstrates a limited or no ability to select and apply appropriate, discipline-specific methods and techniques to develop and apply knowledge and understanding and to initiate and carry out tasks, and in turn: <ul style="list-style-type: none"> • practical tasks and/or processes attempted but inaccurate and error strewn and with little or no degree of independence 	Work demonstrates an insufficient ability to select and apply appropriate, discipline-specific methods and techniques to develop and apply knowledge and understanding and to initiate and carry out tasks, and in turn:	Work demonstrates a sufficient ability to select and apply appropriate, discipline-specific methods and techniques to develop and apply knowledge and understanding and to initiate and carry out tasks, and in turn:	Work demonstrates an ability to select and apply in a consistent and informed manner appropriate, discipline-specific methods and techniques to develop and apply knowledge and understanding and to initiate and carry out tasks, and in turn:	Work demonstrates an ability to select and apply in a capable and effective manner appropriate, discipline-specific methods and techniques to develop and apply knowledge and understanding and to initiate and carry out tasks, and in turn:	Work demonstrates an ability to select and apply in a highly accomplished manner appropriate, discipline-specific methods and techniques to develop and apply knowledge and understanding and to initiate and carry out tasks, and in turn:	Work demonstrates an ability to select and apply in a highly accomplished and innovative manner appropriate, discipline-specific methods and techniques to develop and apply knowledge and understanding and

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completion of practical tasks/processes • Technical and creative skills	• use of an appropriate range of technical and creative skills is not demonstrated in most including key areas	• practical tasks and/or processes completed inaccurately or using a limited, procedural, or mechanistic formula and with little degree of independence • use of an appropriate range of technical and creative skills is not demonstrated in some key areas	• complete practical tasks and/or processes accurately and with a degree of independence in sometimes complex and unpredictable situations • use an appropriate range of technical and creative skills	• complete practical tasks and/or processes accurately and independently in sometimes complex and unpredictable situations • consistently use an appropriate range of technical and creative skills	• complete practical tasks and/or processes autonomously and with accuracy and coordination in sometimes complex and unpredictable situations • consistently use an appropriate range of highly developed relevant technical and creative skills	• complete practical tasks and/or processes autonomously and with a high degree of accuracy, coordination, and proficiency in sometimes complex and unpredictable situations • consistently use a full range of highly developed technical and creative skills	to initiate and carry out tasks, and in turn: • complete practical tasks and/or processes autonomously and with a high degree of accuracy, coordination, and proficiency in often complex and unpredictable situations • consistently use a full range of exceptional technical and creative skills
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Examples of grading applying the above criteria to your Design Patterns assignment are below. Note, the following are indicative (not exhaustive), thus a technically outstanding assignment may achieve a high grade even if some presentation elements (e.g. supporting narrative) are incomplete.

A - Where all the logbook tasks are completed to a high standard. Design patterns are clearly explained, supported by correct UML and imaginative/innovative working code implementations. There will be strong evidence of critical evaluation with reference to supporting literature.

B - Where most logbook tasks are properly completed. Explanations of design patterns or supporting elements (UML diagrams and code implementations) are for the most part correct but could be refined or more effectively implemented. An evidence base of appropriate literature will be present but there may be scope for a greater depth of critical evaluation.

C – Although logbook tasks are completed, there are errors and gaps in solutions and the explanations for these and the accounts for the four freely chosen examples. The use of supporting elements and literature is evident but not fully integrated as part of a cohesive and coherent evaluation of design patterns.

D – Core concepts of design patterns are understood but the submission contains errors or significant omissions. Although essential LOs are met, limited explanation is provided (perhaps because of lack of implementation) and the logbook report is incomplete.

E - The coursework elements have been attempted but contain many errors and omissions. The evidence for having understood the purpose and application of design patterns is weak and key assignment stages are either unsuccessfully attempted or not reported.

F - Where there is little evidence that: (i) desired learning outcomes have been achieved concerning the structures and intentions for design patterns; (ii) understanding is sufficient to implement design patterns appropriate to a given set of circumstances.